CLAIMS

1. A furnace for carbonizing material, said furnace comprising:

a group of inner chambers, each inner chamber in said group of inner chambers having a lid which can be opened and closed to input material; and

an outer chamber having an opening,

said outer chamber and said group of inner chambers moving relative to each other so that said group of inner chambers is housed in said outer chamber through said opening, whereby a combustion space is formed between said group of inner chambers and said outer chamber so as to heat each said inner chamber to dry said material by distillation.

2. A furnace according to claim 1, wherein said outer chamber moves so that said group of inner chambers is housed in said outer chamber.

3. A furnace according to claim 1, wherein each said inner chamber extends substantially in a horizontal direction, one end of each said inner chamber being closed, another end of each said inner chamber having said lid.

4. A furnace according to claim 1, wherein one end of said outer chamber is closed and another end of said outer chamber has said opening.

5. A furnace according to claim 1, comprising a plurality of said groups of inner chambers, said outer chamber being

movable from one of said plurality of groups of inner chambers to another of said plurality of groups of inner chambers .

6. A furnace according to claim 1, wherein each said lid can separate from each said inner chamber.

7. A furnace according to claim 1, further comprising a holder that holds an outer cover and said group of inner chambers, said outer cover covering said opening when said group of inner chambers is housed in said outer chamber.

8. A furnace according to claim 1, further comprising a carrier which moves in said inner chamber, said material being loaded into said carrier.

9. A furnace according to claim 8, wherein a plurality of said carriers are housed in each said inner chamber, one of said plurality of carriers being disposed above another of said plurality of carriers.

10. A furnace according to claim 1, wherein said outer chamber moves in one of a horizontal direction and a vertical direction.

11. A furnace according to claim 1, wherein an outer surface of said inner chamber is provided with a heat receiving portion which projects outward.

12. A furnace according to claim 1, further comprising a holder which holds said group of inner chambers, said holder moving in one of a horizontal direction and a vertical direction.

13. A furnace according to claim 1, wherein said material is carbonized whereby gas is generated from said material, said gas being discharged from said inner chamber.

14. A furnace according to claim 13, wherein a part of said discharged gas is sent back to each said inner chambers.

15. A furnace according to claim 13, further comprising a combustion apparatus, which burns said discharged gas, said combustion apparatus having:

a first combustion room to which said discharged gas is sent, said discharged gas being burnt in said first combustion room;

a second combustion room, to which said discharged gas which has passed through said first combustion room is sent, said discharged gas being burnt again using charcoal in said second combustion room; and

a brick layer that is heated by said charcoal, said discharged gas which has passed through said first combustion room or said second combustion room, being burnt again by said brick layer.

16. A furnace according to claim 1, further comprising a separation apparatus that cools gas discharged from said inner chamber so as to liquefy said discharged gas,

said separation apparatus having:

a first separation pipe that connects with said inner chamber;

a second separation pipe that connects with said first separation pipe through a joint pipe, said discharged gas passing through said second separation pipe after passing through said first separation pipe; and

a cooling apparatus that cools said discharged gas in said first and second separation pipes,

a diameter of said first separation pipe being larger than a diameter of said second separation pipe.

17. A furnace according to claim 1, further comprising a separation apparatus that cools gas discharged from said inner chamber so as to liquefy said discharged gas,

said separation apparatus having:

a first pipe group containing a plurality of first separation pipes, each of said first separation pipes connecting with said inner chamber, said discharged gas passing through said first separation pipes; and

a cooling apparatus which cools said discharged gas in said first separation pipes.

18. A furnace according to claim 17, wherein said separation apparatus further has one connection pipe which connects with said inner chamber, said plurality of first separation pipes connecting with said inner chamber through said one connection pipe.

19. A furnace according to claim 18, wherein said plurality of said first separation pipes have the same length, and

extend in the same direction, one end of said first separation pipes connecting with said one connection pipe, another end of said first separation pipes connecting with one joint pipe.

20. A furnace according to claim 17, wherein adjoining first separation pipes in said first pipe group are separated from one another.

21. A furnace according to claim 17, wherein said separation apparatus further has;

one joint pipe with which said plurality of first separation pipes connect to; and

a second pipe group of a plurality of second separation pipes, said plurality of second separation pipes connecting with said one joint pipe, said discharged gas passing through said second separation pipes after passing through said first separation pipes, said cooling apparatus cooling said discharged gas in said second separation pipes also.

22. A furnace for carbonizing material, said furnace comprising:

a group of inner chambers, each inner chamber in said group of inner chambers having a lid which can be opened and closed to input said material;

an outer chamber having an opening;

a moving apparatus that moves said outer chamber and said group of inner chambers relative to each other so that said group of inner chambers is housed in said outer chamber

through said opening to form a combustion space between said groups of inner chambers and said outer chamber so as to heat each said inner chamber to dry said material by distillation.

23. A furnace for carbonizing material, said furnace comprising:

an outer chamber having a first outer lid which can be opened and closed; and

a group of inner chambers, each chamber in said group of inner chambers having an inner lid which can be opened and closed to input said material,

said group of inner chambers being provided in said outer chamber so that a combustion space is formed between said inner chambers and said outer chamber so as to heat each said inner chamber to dry said material by distillation, said first outer lid being located over said inner lid so as to input said material to said inner chamber.

24. A furnace according to claim 23, wherein said outer chamber further has a second outer lid which can be opened and closed so as to cool said inner chamber.

25. A furnace for carbonizing material, comprising:

an outer chamber; and

an inner chamber that is provided in said outer chamber so that a combustion space is formed between said inner chamber and said outer chamber so as to heat said inner chamber to dry said material by distillation, said inner chamber

having a lid which can be opened and closed to input said material, said inner chamber rotating around the longitudinal axis of said inner chamber, said longitudinal axis extending substantially in a horizontal direction.

26. A furnace according to claim 25, further comprising a rotating element for rotating said inner chamber, said rotating element being disposed on an end of said inner chamber, said end being located outside said outer chamber.

27. A furnace according to claim 26, wherein said inner chamber is inserted into said outer chamber whereby said inner chamber rotatively fixes to said outer chamber.

28. A furnace according to claim 25, wherein an inner surface of said inner chamber is provided with a blade which extends substantially in a horizontal direction so as to mix said material when said inner chamber rotates.

29. A furnace according to claim 25, further comprising:

a holder having a plurality of hollows; and

a plurality of balls being rotatively fitted into said plurality of hollows, said inner chamber being rotatively held by said plurality of balls in said holder.

30. A furnace according to claim 29, wherein an outer surface of said inner chamber is provided with a plurality of groove elements which extend around said inner chamber in a rotational direction of said inner chamber, said inner chamber rotating on said plurality of balls, said plurality

of balls fitting in said plurality of grooves.

31. A furnace according to claim 30, wherein said groove elements form guide portions which extend around said inner chamber in a rotational direction of said inner chamber, said inner chamber being rotationally guided on said guide portions.

32. A furnace according to claim 25, wherein said inner chamber extends substantially in said horizontal direction.

33. A furnace according to claim 25, wherein said outer chamber and said inner chamber moves relative to each other so that said inner chamber can be housed in said outer chamber and can be apart from said outer chamber.

34. A furnace according to claim 33, comprising a plurality of said inner chambers, said outer chamber being movable from one of said plurality of inner chambers to another of said plurality of inner chambers.

35. A furnace according to claim 33, further comprising:

a holder that holds said inner chamber and an outer cover,

said outer chamber having an opening,

wherein said outer cover covers said opening when said inner chamber is housed in said outer chamber, whereby said combustion space is formed between said inner chamber and said outer chamber.

36. A furnace according to claim 35, wherein said inner chamber is arranged through said outer cover whereby said

inner chamber is rotatively fixed to said outer cover.

37. A furnace according to claim 25, wherein said inner chambers forms a group of inner chambers, said group of inner chambers being provided in said outer chamber.

38. A furnace according to claim 37, wherein said outer chamber and said group of inner chambers move relative to each other so that said group of inner chambers is housed in said outer chamber.

39. A furnace according to claim 38, comprising a plurality of said groups of inner chambers, said outer chamber being movable from one of said plurality of groups of inner chambers to another of said plurality of groups of inner chambers .